

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE		PAGE OF PAGES 1 5	
2. AMENDMENT/MODIFICATION NO. 1		3. EFFECTIVE DATE 03/16/2011		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)
6. ISSUED BY CODE		PS32-B		7. ADMINISTERED BY (If other than Item 6) CODE		PS32-B
Procurement Office George C. Marshall Space Flight Center National Aeronautics and Space Administration Marshall Space Flight Center, AL 35812				John Busbey/256.544.0896 FAX 256.544.9162 Email: john.a.busbey@nasa.gov AUTOMATED INVOICE PAYMENT INFORMATION: (256) 544-5566		
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State, and Zip Code)				(x) 9A. AMENDMENT OF SOLICITATION NO. NNM11ZPS001E 9B. DATED (SEE ITEM 11) 02/17/2011 10A. MODIFICATION OF CONTRACT/ORDER NO. 10B. DATED (SEE ITEM 13)		
CODE		FACILITY CODE				

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

X The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, X is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(x)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor is not, X is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

"Central Steam Facility Construction and Steam Infrastructure Repairs"

The purpose of this amendment is to answer questions and make clarifications to the Plans and Specifications.

All terms and conditions of the solicitation remain the same.

The bid date, time and location remains un-changed: bids to be opened on March 24, 2011 at 1:00 p.m. local time at the Huntsville Madison County Chamber of Commerce, located at 225 Church ST, Huntsville, AL 35810.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
		John Busbey	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY Original signed by	03/16/2011
		(Signature of Contracting Officer)	

Question 1. The following are some questions pertaining to the Component Specs in the rear of Section 240004 (all of these are similar and pertain to missing attachments)

- 1) Page 14---AOV 7&8 (Butech/Sunsource) says see attached Butech/Sunsource data sheets for add'l information (No attachment)
- 2) Page 16---GV1 thru GV4 (Flowserve Globe Valves) says see attached Flowserve data sheet for Model#, Part#, Nom.CV & Press. Drop (No attachment)
- 3) Page 17---CV-1 thru CV-4--(Grayloc Check Valves) Says see attached information (No attachment)
- 4)Pages 10,11,12,28,29&30 (Thermax Vaporizers & Trim Heaters VPRZR 1,2,3,4,5,6,6&8 & TH1,2,3,4,5&6) Says see attached Thermax data sheet for add'l information (TH5&6 also lists BEBCO Purge System attachment which is not there)

Answer 1. The items listed above should not have additional data sheets attached. Bidders shall bid per the Plans and Specifications.

Question 2. In reviewing the drawings and specifications I am unable to find anything related to the pressure classes or gauges of the HVAC ductwork for the alternates.

Answer 2. The seal class shall be SMACNA Class B and rated for at least 3" Water Gauge Static pressure downstream of any air handlers and upstream of any VAV boxes.

The seal class shall be SMACNA Class C and rated for at least 1" Water Gauge Static pressure downstream of VAV boxes.

Question 3. Reference drawing # FAC-AC-4649-M4, in the Electric Boiler Schedule, Note 1 lists multiple equipment communication interfaces options to the UCS controller. However, sheet UCS2 shows the boiler is to be Modbus and gives specific interfaces for all equipment that is to communicate to the UCS controller. This scenario is repeated many times in the project plans for various buildings. Suggest the mechanical contractors contact the UCS contractor before ordering equipment to confirm compatibility with the UCS communication plan.

Answer 3. Bid per Plans and Specs and coordinate with any Sub-Contractors.

Question 4. Reference drawing # FAC-AC-4649-M3, Hot Water Sequence of Operations mentions a Hot Water Supply Pressure sensor (HWSP) to limit pump pressure. This point is not listed on UCS drawings or shown on the equipment schematic. Is the sensor to be included and installed or should it be deleted from the Sequence of Operations? This scenario is repeated many times in the project plans for various buildings.

Answer 4. Disregard and Delete Hot Water Supply Pressure Alarm sequence from all Pump Sequences.

Question 5. Reference drawing # FAC-AC-4649-UCS2, SK: DP4 is shown to be used for VFD pump status. Typically, UCS requires that SK: ISW1 be used for any VFD status. Can ISW1 be used for VFD pump status instead of DP4?

Answer 5. Use SK ISW1 for VFD Pump Status in lieu of SK DP4.

Question 6. Reference drawing # FAC-AC-4655-M5, in the Electric Heating Coil Schedule; Note 1 states to provide SCR control and Note 3 to connect to UCS controls. It should be noted that the SCR controller must accept an input signal from the UCS controller of 0-20mA, 4-20mA or 0-10Vdc. This scenario is repeated many times in the project plans for various buildings.

Answer 6. Bid per Plans and Specs and coordinate with any Sub-Contractors.

Question 7. Reference drawing # FAC-AR-4656-M6, 4656-AH0002 shows an Outside Air Flow Station. There is no model or type shown and I can't locate any air flow stations in the bid disk specifications. Due to low flow at minimum, should manufacturer Ebtron GTA116-PC be the recommended type? This scenario is repeated many times in the project plans for various buildings that have new mechanical air handling units to install.

Answer 7. Ebtron GTA116-PC or equivalent thermal type flow monitor is desired for air measuring due to low flow conditions.

Question 8. Reference drawing # FAC-AR-4656-M8, in the Air Handler Unit Schedule, there is a cooling coil shown but no control valve listed. I cannot locate any control valve section in the bid disk specifications. Are these to be manufactured by FCI Delta P type? If so, can a control valve schedule be furnished by the Government? This scenario is repeated many times in the project plans for various buildings that have new mechanical air handling units to install.

Answer 8. Control valve Schedule is attached (See end of amendment 1 for attachments)

Question 9. Bldg 4657 H2 Piping--P2 of 6 (Sheet 95 of 185)--The floor plan drawing indicates SS Drip Pans only in certain areas, and the Note 18 symbol on the floor plan states "provide drip pans as shown" But , Note 18 itself states "Provide SS Drip Pans under all tubing and fittings" . Is it "all" or "as shown"--please clarify.

Answer 9. Sheet FAC-I-4657-P2: Revise Note 18 to read as follows: Install stainless steel drip pan under all Liquid Hydrogen tubing and fittings installed above concrete.

Question 10. Spec. Ref. Sheets 240004-15 & 16 (Manual Globe Valves) covers the same designated valves (GV1 thru 4) and appears to be identical. There is no Spec. Sheet to cover valves GV5 thru 8.

Answer 10. See the attached revised 240004 Specification (Marked "REVISED 3/10/2011" in the document footer). The entire specification has been revised.

Question 11. Spec Ref Sheets 240004-13 & 14 cover AOV-01 thru 8 (Remote operated Globe valves)---the Mfg. Rep listed (Paul Fay) says that these Sunsource Valve numbers are Needle Valves, not Globe Valves---probably just need to change the nomenclature.

Answers 11. They are in fact needle valves, but they will be on-off actuated valves functioning as a globe valve.

Question 12. The drawings indicate a typical detail at both Bldg. 4657 & 4659 for 100 PSI-1/4" GN2 service lines to serve the actuators for these valves, but does not tell us where we pick up this 100 PSI GN2. Where do we pickup this 100 PSI GN2?

Answer 12. 4657 Has a GN2 Regulated Panel at the West end of pad located just to the South of the Metal Grate Catwalks shown on FAC-I-4657-P2. 4659 has a GN2 regulated panel on the West wall of the "lean to" portion of the building close to Pump Module 1 as shown on page FAC-T-4659-P2. The lines will need to be field routed from there to the end use.

Question 13. One more question on these valves if you can---Paul Fay also asked about the cycling frequency of these valves for selecting the Butech actuators---can you provide this information?

Answer 13. The air operated valves (AOV1-8) will be left open the majority of the time, and will not be frequently actuated. At most, assume the valves would be opened and closed 1-2 times a day.

Question 14. Specification Section 010010 States in Paragraph 1.1.B the following for Base Bid and Alternate #1. B. The work is subdivided in Base Bid and four Additive Alternates. Work is further identified on each drawing according to its respective package. That work is defined as follows:

1. Base Bid: All work associated with installation of the fan-powered ambient vaporizer systems for the hydrogen facility (building 4657) and the nitrogen facility (building 4659).
2. Additive Alternate #1: All work associated with conversion of the existing facility steam to electric within the 4660 Area as indicated including buildings 4649, 4653, 4655, 4656, 4659 and 4678.

Answer 14. The contractor's assumptions are right. The Base Bid is for only the work associated with installing the Nitrogen and Hydrogen Vaporizer systems. Alternate #1 should address the work in converting the heating of the buildings from steam to electric heat. This affects sheets FAC-T-4659-E1 & E2.

Question 15 Dwg S-1 (Bldg 4671)(7 of 185)---Section 2/S1---Detail states "Brace existing C11.5 @ Sag Rod locations"--Need more info--it does not tell us what type of bracing is required, nor how many Sag Rods---can we get more detail as to what is desired here?

Answer 15 The contractor is reading sheet S1 incorrectly. The detail (2/S1) states "Existing C8x11.5 brace at sag rod locations" not "Brace existing...."). The detail is a section of a plan where a new W6x15 should be welded to the existing C8x11.5 sag rod braces to support a new fan that is installed on sheet FAC-F-4671-M2. The contractor should bid per plans and specs.

NOTE: In Specification 241004 Welding General, please remove paragraph 1.12 and replace with the following. A replacement for this section has been attached with this paragraph in Bold Italics and the Footer Marked as "REVISED 3/10/2011" for convenience.

1.12 SUBMITTALS

- A. Contractor shall submit Procedure Qualification Records (PQR's), Welder Performance Qualifications (WPQ's) Welding Procedure Specifications (WPS's) to Owner's Agent for review by MSFC Pressure Systems Manager's Office (PMSO) prior to start of fabrication. The MSFC PMSO shall review the system design including complete Weld Inspection Records

ATTACHMENTS TO FOLLOW

Note: Attachments 1 and 2 are to replace corresponding sections within the specifications.

Attachment 1

Central Steam Facility Construction and Steam Infrastructure Repairs M5041

WELDING – GENERAL **REVISED 3/10/2011** 241004 – 1

SECTION 241004 - WELDING - GENERAL

PART 1 – GENERAL

1.1 REQUIREMENTS

A. Before a welding operator or welder is assigned to do any work he shall pass qualification tests using the same base metals, equipment, electrodes, positions and procedures that will be encountered in his work. All welders and welding operators employed shall be qualified for this particular project, except that the qualification of a welder or welding operator may be submitted to the Contracting Officer with a request for approval providing that:

1. The qualification submitted comply with requirements specified herein;
2. Qualification tests have been taken within 6 months;
3. The welder or welding machine operator has been employed as a certified welder on work for the Government within the past 60 days.

1.2 STRUCTURAL STEEL

A. Qualification tests to weld structural steel, bar joists to bearing plates, and metal decking to joists or structural steel shapes shall conform to AWS Std. D1.1 for each type of Steel to be used, except that qualification on any one of the steels conforming to ASTM Std. A36, A 283, or A 306 shall constitute qualification on the other two grades. The operator qualification test shall include without assistance, setting of amperage and voltage controls and starting the machine.

1.3 WELDING PERMIT

A. Prior to performing any welding, the Contractor shall obtain a welding permit from the Contracting Officer.

1.4 QUALITY OF WELDING

A. The Contractor shall be responsible for the quality of the welding.

1.5 PROCEDURE QUALIFICATION

A. Welding procedure qualification testing shall be performed by the Contractor at no cost to the Government. The procedure testing shall include all types of welding, with the proposed electrodes, to be used by the Contractor. The procedure shall conform to the applicable regulatory codes, including AWS Standard D1.1; ASTM Standard A423. A370 and ASME Boiler and Pressure Vessel Code Section IX, ASME Code for Pressure Piping B31.3. The procedure, including test results, shall be submitted, in triplicate, to the Contracting Officer for approval. Copies of the approved procedure shall be retained by the Contractor and shall be made available for examination by authorized personnel. Deviation from the approved

Attachment 2

Central Steam Facility Construction and Steam Infrastructure Repairs M5041

240004 – SPECIALITY PIPING AND COMPONENTS 1

REVISED 3/10/2011

SECTION 240004 – SPECIALTY PIPING AND COMPONENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Division 1 Specification Sections, apply to this Section.

B. Related Sections include the following:

1. Section 250529 – Hangers and Supports.
2. Section 241004 – Welding - General
3. Section 242004 – Radiographic Inspection
4. Section 243004 – Cleaning for Process Piping

1.2 SUMMARY

A. This section includes materials, fabrication, and finish of piping, tubing, valves, gauges, and components used in the fabrication of gaseous and liquid nitrogen systems as describe herein. Appendix I contains the component data sheets which contain detail specifications and model numbers for components to be provided.

1.3 ROLE OF THE CONTRACTOR

A. The Contractor shall be responsible for delivery of submittals, fabrication, cleaning, proper packing and shipping of the piping and components in accordance with the above referenced drawings and the provisions of this specification.

1.4 STANDARDS AND CODES

A. American National Standards Institute:

1. ANSI B16.5 - Pipe flanges, flanged fittings, steel nickel alloy and other special alloys
2. ANSI B16.9 - Factory made wrought steel buttweld fittings
3. ANSI B16.11 - Forged steel fittings, socket-welded and threaded
4. ANSI B16.21 - Nonmetallic gaskets for pipe flanges
5. ANSI B16.25 - Buttwelding ends
6. ANSI B16.34 - Buttweld end valves
7. ANSI B16.36 - Weldneck orifice flanges, class 300 through 2500
8. ANSI/ASME B31.3 - Chem. Plant and Petroleum Refinery Piping
9. ANSI/ASME B36.10 - Welded and Seamless wrought steel pipe
10. ANSI B36.19 - Stainless Steel Pipe

B. American Society for Testing Materials

Attachment 3

WATER CONTROL VALVE SCHEDULE

MARK	UNIT SERVED	SERVICE TYPE	VALVE SIZE (IN.)	FLOW RATE (GPM)	ACTUATOR TYPE	NORMAL POSITION (FLOW THRU COIL)	MANUFACTURER	MODEL	*CV	NOTE
4656-V0001	4656-AH0002	CHILLED WATER	1.25	13.9	ELECTRONIC (4-20 MA)	CLOSED	FLOW CONTROL	HDP-18-05-150	SEE NOTE	1,2
4670-V0001	4670-AH0002	CHILLED WATER	2	45	ELECTRONIC (4-20 MA)	CLOSED	FLOW CONTROL	HDP-52-05-150	SEE NOTE	1,2
4670-V0002	4670-AH0003	CHILLED WATER	0.75	5	ELECTRONIC (4-20 MA)	CLOSED	FLOW CONTROL	HDP-6-05-150	SEE NOTE	1,2
4670-V0003	4670-AH0005	CHILLED WATER	0.75	4	ELECTRONIC (4-20 MA)	CLOSED	FLOW CONTROL	HDP-6-05-150	SEE NOTE	1,2

* $C_v = GPM \cdot \sqrt{1/P}$, WHERE P IS THE CHANGE IN PRESSURE (PSI) AND C_v IS IN U.S. CUSTOMARY UNITS

1. 5 - 70 PSID, 150 PSIG BODY RATING

2. PRESSURE INDEPENDENT CONTROL VALVE (FLOW CONTROL INDUSTRIES "DELTA-P") -BASIS OF DESIGN OR APPROVED EQUAL